

CLAIMS

I claim:

1. Boring unit for complex parts, characterized in that it comprises a fixing pin (A), suitable for holding the piece (O) in its hole, and two concentric cylinders (Ci, Ce) coaxial with said pin (A), which are set rotating in the same direction by two electric motors (Mi, Me), and wherein the inner cylinder (Ci) is provided, at its end facing the grip (Ae) of the pin (A), with a conical toothing (Cie), and wherein the outer cylinder (Ce) is provided, at its end facing the grip (Ae) of the pin (A), with a tool-holder (P) with radial translation means (Pm) of the tools (U) and with a bevel gear wheel (Pe) meshing with the conical toothing (Cie) of the inner cylinder (Ci) and connected with the radial translation mechanism (Pm) of the tools (U).

2. Boring unit for complex parts according to claim 1, characterized in that the radial translation of the tools (U) is obtained by rotating said cylinders (Ci, Ce) at different speeds by means of electric motors (Mi, Me), that is, by generating a relative motion between them, and consequently the bevel gear wheel (Pe) of the tool-holder (P) meshing with the conical toothing (Cie) of the inner cylinder (Ci) rotates on its own axis, thus operating said radial translation mechanisms (Pm) of the tools (U).

3. Boring unit for complex parts, in particular for door handles, according to claims 1, 2, characterized in that the grip (Ae) of the traction pin (A) is square and can be expanded, and wherein at the opposite end of said traction pin (A) there is a mechanism (Am) that expands the grip (Ae) and a mechanism (At) that causes the axial translation of the whole traction pin (A), and wherein said

grip (Ae) of the traction pin (A) is positioned at the centre of the tool-holder (P) of said outer cylinder (Ce).

4. Boring unit for complex parts, in particular for door handles, according to claims 1, 2, 3, characterized in that both the tool-holder (Pu) and the tools (U) and/or the couplings (Pu) of the tools (U) are L or Z-shaped, in such a way as to ensure the boring, that is, the action of the tools (U) themselves, in a concentric area outside the tool-holder (P) on the side opposite the outer cylinder (Ce).

5. Boring unit for complex parts, in particular for door handles, according to claims 1, 2, 3, 4, characterized in that it comprises an electronic circuit (X), that can be programmed, set or controlled manually, which controls the motion of both the electric motors (Mi, Me), the locking and the translation of the square traction pin (A), and wherein said electronic circuit (X) reads the instantaneous positions and the speeds of both motors (Mi, Me) of the rotary cylinders (Ci, Ce), calculates the relative position of the tool-holder (P) according to the relative positions of the two motors (Mi, Me) and provides for controlling them so that, though rotating, they remain synchronized and allow also the controlled shifting according to a precise movement diagram that corresponds to the working path.